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# Mothers' perceptions of the practice of kangaroo mother care for preterm neonates in sub-Saharan Africa: a qualitative systematic review protocol

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## ABSTRACT

**Objective:** The objective of this review is to explore the experiences of mothers with the practice of kangaroo mother care (KMC) for preterm neonates at home in sub-Saharan Africa.

**Introduction:** About 7000 newborn babies die every day around the world. About 80% of these deaths occur in sub-Saharan Africa and southern Asia. Preterm birth and low birth weight (LBW) are major causes of newborn deaths in these regions. Kangaroo mother care is an alternative way to care for LBW preterm neonates; however, the rate of practice remains low. Studies have identified a range of barriers, primarily at the healthcare system level, but there is a dearth of evidence on the factors and enablers at the community level.

**Inclusion criteria:** The review will consider studies conducted in sub-Saharan Africa on the perceptions and experiences of mothers who have given birth to preterm babies and have practiced KMC at home. Qualitative studies in English and French conducted from January 1979 to the present that exclusively use qualitative research methods including, but not limited to, phenomenology, grounded theory, ethnography, action research and feminist research will be included.

**Methods:** PubMed, Embase, Web of Science, Scopus, African Index Medicus (AIM), Academic Search Complete, CINAHL complete, Education Source and Health source: Nursing/Academic Edition will be searched. Eligible studies will be critically appraised using the standardized Joanna Briggs Institute tool. Findings will be pooled using the meta-aggregative approach, and confidence will be assessed according to the ConQual approach.

**Keywords** Kangaroo mother care; mothers; perceptions; skin to skin care; sub-Saharan Africa

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## Introduction

About 7000 newborn babies die every day around the world, representing 46% of deaths of children under five. About 80% of these deaths occur in sub-Saharan Africa and southern Asia.<sup>1</sup> One out of 36 newborns in sub-Saharan Africa dies within one month compared to one in 333 in the world's richest countries.<sup>1</sup> Preterm birth and low birth weight (LBW) are major causes of newborn deaths in these regions, accounting for 60–80% of these deaths.<sup>2</sup> Preterm LBW newborns who are able

to survive the early neonatal period are at increased risk of early growth retardation, infections, developmental delays and early death at infancy or childhood.<sup>3</sup> The burden of LBW infants continues to be more prevalent in low-income countries than high-income countries, as 18 million of the 20 million global LBW infants born annually are in low-income countries.<sup>4</sup> Nine of the 11 countries with preterm birth rates of more than 15% are in sub-Saharan Africa.<sup>5</sup> There is also disparity in the survival of preterm newborns, depending on where they are born, with more than 90% dying in low-income countries compared to less than 10% in the richest countries.<sup>5</sup>

Conventional medical care for LBW babies involves use of an incubator, cardiopulmonary monitors, intravenous infusions and continuous

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positive airway pressure ventilators. The care is complex, requiring expensive infrastructure and highly skilled staff, which countries with limited resources cannot afford.<sup>6,7</sup> Kangaroo mother care (KMC) has been identified as an alternative way to care for LBW preterm neonates.<sup>8</sup> First initiated in 1978 in Colombia, KMC involves placing the neonate in skin-to-skin contact on the mother's chest between her breasts and under her clothes, exclusively breastfeeding the neonate, giving emotional and physical support to the mother and early discharge from health facility to continue with the process at home.<sup>8</sup> Kangaroo mother care has been shown to have multiple health benefits to neonates, parents and the health system. It promotes parent-child bonding<sup>9</sup> and breastfeeding,<sup>10</sup> and stabilizes the vital signs of the neonate, particularly body temperature and heart and respiratory rates, leading to increased weight gain and improved growth.<sup>11-13</sup> In effect, KMC reduces the need for expensive conventional medical care, improves parental involvement in care provision and offers opportunities for health education.<sup>14</sup>

Despite the robust evidence on the benefits of KMC, the rate of practice has remained low.<sup>15,16</sup> It has been considered as the next option to incubator care only in low-income countries.<sup>17</sup> Some health workers do not actively promote the implementation of KMC as they still believe it is only feasible for neonates who are clinically stable,<sup>18</sup> while others lack the necessary skills to instruct its practice, especially teaching the mothers how to position the neonate on the chest, how to protect the airway and how to breastfeed in that position.<sup>19</sup> Some hospital cultures and norms in low-income countries impede effective implementation of KMC.<sup>15</sup> For example, some health facilities do not allow parents to be present with their neonates during medical rounds, disrupting continuous skin-to-skin contact and limiting the opportunity for the mothers to interact with the healthcare providers and ask questions, thus preventing them from receiving adequate information about KMC and how to implement it.<sup>20</sup>

As previously stated, the practice of KMC begins at the hospital, and parents are encouraged to continue at home. However, in low-resource settings, successful initiation of KMC in hospital has not been effectively practiced in the communities, and there appears to be no follow-up within the continuum of care in the healthcare system.<sup>8</sup> In a longitudinal

study in Ghana, although 95.5% of mothers expressed willingness to continue KMC at home after discharge, only 71.8% were willing to practice it outdoors and only 61.9% believed that KMC was easy to practice.<sup>21</sup> At the first follow-up visit in that study, only 87.9% and 58.2% of the mothers were practicing KMC at night and outdoors, respectively. The authors explained that mothers feared the practice of KMC would not be acceptable in the community as traditionally babies are carried on the mother's back instead of on their chest. Even the parents who continued to practice KMC at home did it only at times convenient to them and were not able to achieve continuous KMC.<sup>15</sup>

A study in India identified several barriers to the practice of KMC, which included heat and humidity during the summer, lack of privacy, reluctance to wear clothes with open fronts due to cultural reasons as well as fear of injuring the umbilical cord of the neonate and causing bleeding due to friction with the mother's abdomen.<sup>22</sup> Other barriers identified in that study included fear of transmitting the mother's infections to the neonate, fear of pressing the babies stomach and causing vomiting, concerns that the practice would prevent the mother from resuming routine work due to excessive bonding, lack of time and lack of family support. Some mothers consider the feeding process a barrier as the act of breastfeeding and breast milk expression interferes with the extensive skin-to-skin contact of KMC session.<sup>23</sup> Several mothers also think KMC presents an uncomfortable sleeping position that results in inadequate sleep.<sup>23</sup> However, several studies in both high- and low-income countries have also outlined supportive factors to KMC, as perceived by parents.<sup>23,24</sup> Supportive family members who help the mother with either KMC itself or other activities such as cooking, fetching water and looking after other siblings, caring healthcare providers who guide parents and are available for follow-up, and government policies that allow both parents time off work to support KMC were all perceived as facilitating factors by the parents.

By improving thermoregulation, maternal bonding and exclusive breastfeeding, KMC is a valuable intervention for reducing neonatal morbidity and mortality, the success of which, unlike other maternal child health interventions, depends on adequate efforts from members of the family.<sup>25</sup> However, there is inadequate documentation of the determinants of KMC practice at the community level.

While several systematic reviews have been published on the factors and enablers of the practice of KMC,<sup>26-29</sup> they all focus on factors at the healthcare system level, prioritizing the perspectives of healthcare providers and managers and/or the practice of KMC at health facility level; there is a dearth of evidence on the factors and enablers of the practice at the community level. Additionally, the reviews combined studies from high- and low-income countries, thus the findings are not easily transferable and do not allow a deep exploration of the specific barriers to and enablers of the practice in the sub-Saharan African context where there are the highest rates of neonatal mortality and where KMC has the potential to make the greatest impact.

A protocol was proposed three years ago, but it promised to only include studies focusing on neonates who resided in an intensive care unit and the report of this review is still not available three years after.<sup>30</sup> A scoping review has also been proposed recently, but it will also include quantitative data and will not focus on synthesizing evidence on the lived experiences of mothers practicing the intervention for their preterm neonates.<sup>31</sup>

There is, therefore, a need to synthesize the evidence about the experiences of mothers regarding the practice of KMC in sub-Saharan Africa to understand the enablers as well as the barriers to the practice at the community level. A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews and the *JBIR Database of Systematic Reviews and Implementation Reports* was conducted, and no current or underway systematic reviews on the topic were identified. This proposed review aims to overcome these knowledge gaps through synthesizing qualitative evidence about the experience of mothers in the practice of KMC at home in sub-Saharan Africa. The findings of this systematic review will inform the development and the improvement of KMC practice at the community level in sub-Saharan Africa.

## Review question

The question of this review is: what are the experiences of mothers with the practice of KMC for preterm neonates at home in sub-Saharan Africa? The secondary questions are: i) How do women perceive the benefits of practicing KMC? ii) What are the facilitators and barriers perceived by women

to practicing KMC at home? iii) What are the suggestions provided by women to facilitate the practice of KMC at home?

## Inclusion criteria

### *Participants*

The review will consider studies that include mothers who have given birth to preterm babies before 37 completed weeks of gestation and are practicing or have practiced KMC either fully or components of it at home.

### *Phenomena of interest*

This review will consider studies that explore the perceptions/views/experiences/attitudes/beliefs of mothers regarding the practice of KMC/skin-to-skin care at home.

### *Context*

This review will consider studies that were conducted in sub-Saharan Africa. Inclusion will be based on the income status of a country at the time when the study was undertaken, as defined by the World Bank.<sup>32</sup>

### *Types of studies*

This review will consider studies that exclusively use qualitative research methods including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research. Only studies written in English and French will be included. We will also consider studies in other languages but with an English translation available. Studies published from January 1979 to the present will be included, as KMC was first developed in 1978.<sup>33</sup>

## Methods

The proposed systematic review will be conducted in accordance with the JBI methodology for systematic reviews of qualitative evidence.<sup>34</sup> The title for this review appears in the JBI registry (registration number 238).

### *Search strategy*

The search strategy will aim to locate both peer review publications and gray literature. An initial limited search of PubMed has been undertaken followed by analysis of the text words contained

in the title and abstract, and of the index terms used to describe the articles. This informed the development of a search strategy which will be tailored for each information source. A full search strategy for PubMed is detailed in Appendix I. The reference list of all studies selected for critical appraisal will be screened for additional studies.

### Information sources

The databases to be searched include: PubMed, Embase, Web of Science, Scopus, African Index Medicus (AIM), Academic Search Complete, CINAHL complete, Education Source, and Health Source: Nursing/Academic Edition. Sources of gray literature to be searched will include: JSTOR, Open-Grey, Google Scholar and reference lists of identified articles.

### Study selection

Following the search, all identified citations will be collated and uploaded into EndNote (Clarivate Analytics, PA, USA) and duplicates removed. Titles and abstracts will be screened by two independent reviewers for assessment against the inclusion criteria for the review. Studies that meet or could potentially meet the inclusion criteria will be retrieved in full and their details imported into the JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI) (Joanna Briggs Institute, Adelaide, Australia). The full text of selected studies will be retrieved and assessed in detail against the inclusion criteria. Full-text studies that do not meet the inclusion criteria will be excluded, and reasons for exclusion will be provided in an appendix in the final systematic review report. Included studies will undergo a process of critical appraisal. The results of the search will be reported in full in the final report and presented in a PRISMA flow diagram.<sup>35</sup> Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

### Assessment of methodological quality

Selected studies will be critically appraised by two independent reviewers for methodological quality in the review using the JBI qualitative assessment and review checklist.<sup>34</sup> Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer. The results of critical appraisal will be reported in narrative form and in a table.

All studies, regardless of the results of their methodological quality, will undergo data extraction and synthesis where possible. This is to avoid missing any evidence; however, major quality issues will be discussed in the review report.

### Data extraction

Data will be extracted from studies included in the review by two independent reviewers using the standardized JBI data extraction tool.<sup>34</sup> The data extracted will include specific details about the populations, context, culture, geographical location, study methods and the phenomena of interest relevant to the review question and specific objectives. Findings and their illustrations will be extracted and assigned a level of credibility.

### Data synthesis

Qualitative research findings will, where possible, be pooled using JBI SUMARI with the meta-aggregation approach.<sup>34</sup> This will involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation through assembling the findings and categorizing them on the basis of similarity in meaning. These categories will then be subjected to a synthesis in order to produce a single comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form.

### Assessing confidence in the findings

The final synthesized findings will be graded according to the ConQual approach for establishing confidence in the output of qualitative research synthesis and presented in a Summary of Findings.<sup>36</sup> The Summary of Findings includes the major elements of the review and details how the ConQual score is developed. Included in the table are the title, population, phenomena of interest and context for the specific review. Each synthesized finding from the review will then be presented along with the type of research informing it, a score for dependability, credibility and the overall ConQual score.

### Acknowledgments

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**Appendix I: Search strategy for PubMed**

Search	Query	Records retrieved
1.	Perception [tw]	324,517
2.	“Social Perception”[MeSH]	21,210
3.	Attitudes [tw]	179,579
4.	“Health Knowledge, Attitudes, Practice”[MeSH] OR “Attitude” [Mesh] OR “Attitude to Health”[MeSH]	526,501
5.	Kangaroo mother care [tw]	478
6.	“Kangaroo-Mother Care Method”[MeSH]	281
7.	Preterm neonates [tw]	3810
8.	“Infant, Premature”[MeSH]	51,043
9.	Qualitative research [tw]	51,166
10.	“Qualitative Research”[MeSH]	41,164
11.	Focus group [tw]	19,947
12.	“Focus Groups”[MeSH]	25,187
13.	In depth interviews [tw]	14,345
14.	“Data Collection”[MeSH] OR “Evidence-Based Facility Design” [MeSH] OR “Nursing Evaluation Research”[MeSH] OR “Interviews as Topic”[MeSH]	1,951,961
15.	1 OR 2 OR 3 OR 4	857,370
16.	5 OR 6	551
17.	7 OR 8	52,562
18.	9 OR 10 OR 11 OR 12 OR 13 OR 14	1,989,666
19.	15 AND 16 AND 17 AND 18	10
20.	Limit 19 to English AND Humans	10
21.	(MeSH) Sub-Saharan Africa: 198575 OR (MeSH) “Africa”: 1898 OR (MeSH) “Africa South of the Sahara”:	119